

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-105529

(43)Date of publication of application : 11.04.2000

(51)Int.Cl.

G03H 1/16

G03H 1/10

G03H 1/26

(21)Application number : 10-276819

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(22)Date of filing : 30.09.1998

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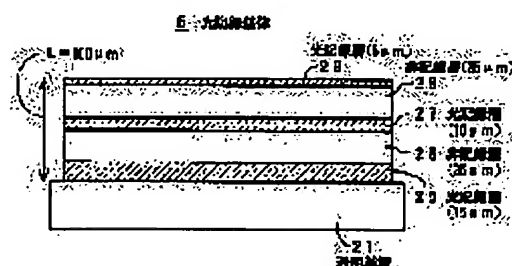
(54) OPTICAL RECORDING MEDIUM, OPTICAL RECORDING METHOD, AND OPTICAL RECORDING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To increase the multiplicity of a volume multiple record in an optical recording medium and an optical recording method for volumetric multiple recording data information as a hologram.

SOLUTION: An optical recording medium 5 is constituted by laminating three optical recording layers 25, 27, 29 consisting of a photosensitive material on a transparent substrate 21 through non-recording layers 26, 28 comprising dielectric materials, which is light transmissive and not light absorbent. Such lamination of two or more optical recording layers through the non-recording layers can reduce the light absorption in the optical recording layer by decreasing the film thickness in individual optical recording layers even if film

thickness L in the recording medium part is enlarged, so that the decrease in a hologram



diffraction efficiency at the time of reading can be prevented. Therefore, the enlargement of the film thickness  $L$  in the recording medium can decrease the shift amount of a shift multiple record, and increase the multiplicity of a volume multiple record. In an optical recording method, signal light having data information is subjected to Fourier transform, and the resultant Fourier transform image is volume multiple recorded in the optical recording medium 5 as a hologram.

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- 3.In the drawings, any words are not translated.

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CLAIMS

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[Claim(s)]

[Claim 1]An optical recording medium with which an optical recording layer which consists of light-sensitive nature material was laminated more than two-layer via non recording layers which consist of light transmittance state material.

[Claim 2]An optical recording medium with which volume multiplex recording of the Fourier transform image of an optical signal to which an optical recording layer which consists of light-sensitive nature material is laminated more than two-layer via non recording layers which consist of light transmittance state material, and holds data information to said optical recording layer was carried out as a hologram.

[Claim 3]An optical recording medium, wherein said non recording layers consist of dielectrics in an optical recording medium of claim 1 or 2.

[Claim 4]An optical recording medium characterized by the optical recording medium concerned being disk form in one optical recording medium of claims 1-3.

[Claim 5]An optical recording method which carries out the Fourier transform of the optical signal holding data information, and carries out volume multiplex recording to an optical recording medium of claim 1 by making the Fourier transform image into a hologram.

[Claim 6]In an optical recording method of claim 5, arrange a shielding body which formed a light transmission section in part ahead of said optical recording medium, and make said light transmission section penetrate and said optical recording medium is irradiated with said Fourier transform image, An optical recording method recording predetermined shape and a hologram of a size on said optical recording medium.

[Claim 7]Light from said light source is modulated according to a light source which emits coherent light, and data information, A spatial-light-modulation machine which obtains an optical signal which holds said data information by the wave front, An image formation optical system which carries out the Fourier transform of said optical signal, and irradiates an optical